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(d) an optical system for forming an optical path of said pulse laser beam for guiding said pulse laser beam from said laser beam source to said sample, said optical system including:

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D a pre-chirp compensator disposed on said optical path such that the pulse laser beam passes therethrough, and preset to provide said pulse laser beam with a certain amount of pre-chirp compensation, said pre-chirp compensator comprising optical elements which cause components of the pulse laser beam to be emitted in order of wavelength such that shorter wavelengths are emitted earlier than longer wavelengths,

20 a plurality of objective lenses adapted to be selectively placed on said optical path for collecting the pulse laser beam on the sample, and

a correcting mechanism for correcting an optical path length of said optical path so as to be constant no matter which of said objective lenses is selectively placed on said optical path,

25 wherein said correcting mechanism comprises at least one optical correcting element adapted to be selectively placed on said optical path in accordance with which of said objective lenses is selectively placed on said optical path, and

30 wherein said certain amount of pre-chirp compensation provided by said pre-chirp compensator is set to prevent a pulse width of said pulse laser beam from widening due to a wavelength range of a pulse of said pulse laser beam when said pulse laser beam passes through said optical path whose optical path length is kept constant.

14. (Second Amended) A multiphoton excitation scanning laser microscope, comprising:

(a) a station for placing a sample to be observed;

(b) a laser beam source for emitting a pulse laser beam for exciting said sample to cause the sample to emit a fluorescent light by multiphoton excitation phenomenon;

(c) a detector for detecting said fluorescent light; and

(d) an optical system for forming an optical path of said pulse laser beam for guiding said pulse laser beam from said laser beam source to said sample, said optical system including:

a pre-chirp compensator disposed on said optical path such that the pulse laser beam passes therethrough, and preset to provide said pulse laser beam with a certain amount of pre-chirp compensation, said pre-chirp compensator comprising optical elements which cause components of the pulse laser beam to be emitted in order of wavelength such that shorter wavelengths are emitted earlier than longer wavelengths,

an optical member adapted to be selectively placed on said optical path, and

a correcting mechanism for correcting an optical path length of said optical path so as to be constant,

wherein said correcting mechanism comprises at least one optical correcting element adapted to be selectively placed on said optical path in accordance with selective placement of said optical member, and

wherein said certain amount of pre-chirp compensation provided by said pre-chirp compensator is set to prevent a pulse

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width of said pulse laser beam from widening due to a wavelength range of a pulse of said pulse laser beam when said pulse laser beam passes through said optical path whose optical path length is kept constant.

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18. (Amended) A multiphoton excitation scanning laser microscope, comprising:

(a) a station for placing a sample to be observed;

(b) a laser beam source for emitting a pulse laser beam for exciting said sample to cause the sample to emit a fluorescent light by multiphoton excitation phenomenon;

(c) a detector for detecting said fluorescent light; and

(d) an optical system for forming an optical path of said pulse laser beam for guiding said pulse laser beam from said laser beam source to said sample, said optical system including:

a pre-chirp compensator disposed on said optical path such that the pulse laser beam passes therethrough, and preset to provide said pulse laser beam with a certain amount of pre-chirp compensation, said pre-chirp compensator comprising optical elements which cause components of the pulse laser beam to be emitted in order of wavelength such that shorter wavelengths are emitted earlier than longer wavelengths,

a plurality of objective lenses adapted to be selectively placed on said optical path for collecting the pulse laser beam on the sample, and

a correcting mechanism for causing an optical path

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length of said optical path to be constant no matter which of
said objective lenses is selectively placed on said optical path,

25 wherein said correcting mechanism comprises an optical
correcting element whose optical path length is adjustable by
applying different voltages in accordance with which of said
objective lenses is selectively placed on said optical path, and

30 wherein said certain amount of pre-chirp compensation
provided by said pre-chirp compensator is set to prevent a pulse
width of said pulse laser beam from widening due to a wavelength
range of a pulse of said pulse laser beam when said pulse laser
beam passes through said optical path whose optical path length
is kept constant.
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19. (Amended) A multiphoton excitation scanning laser
microscope, comprising:

(a) a station for placing a sample to be observed;

5 (b) a laser beam source for emitting a pulse laser beam for
exciting said sample to cause the sample to emit a fluorescent
light by multiphoton excitation phenomenon;

(c) a detector for detecting said fluorescent light; and

10 (d) an optical system for forming an optical path of said
pulse laser beam for guiding said pulse laser beam from said
laser beam source to said sample, said optical system including:

a pre-chirp compensator disposed on said optical path
such that the pulse laser beam passes therethrough, and preset to
provide said pulse laser beam with a certain amount of pre-chirp

15 compensation, said pre-chirp compensator comprising optical
elements which cause components of the pulse laser beam to be
emitted in order of wavelength such that shorter wavelengths are
emitted earlier than longer wavelengths,

20 a plurality of objective lenses adapted to be
selectively placed on said optical path for collecting the pulse
laser beam on the sample, and

25 a correcting mechanism for causing an optical path
length of said optical path to be constant no matter which of
said objective lenses is selectively placed on said optical path,

wherein said correcting mechanism comprises an optical
correcting element whose optical path length is adjustable by
applying different pressures in accordance with which of said
objective lenses is selectively placed on said optical path, and

30 wherein said certain amount of pre-chirp compensation
provided by said pre-chirp compensator is set to prevent a pulse
width of said pulse laser beam from widening due to a wavelength
range of a pulse of said pulse laser beam when said pulse laser
beam passes through said optical path whose optical path length
is kept constant.

20. (Amended) A multiphoton excitation scanning laser
microscope, comprising:

(a) a station for placing a sample to be observed;

5 (b) a laser beam source for emitting a pulse laser beam for
exciting said sample to cause the sample to emit a fluorescent
light by multiphoton excitation phenomenon;

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10 (c) a detector for detecting said fluorescent light; and
(d) an optical system for forming an optical path of said pulse laser beam for guiding said pulse laser beam from said laser beam source to said sample, said optical system including:

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15 a pre-chirp compensator disposed on said optical path such that the pulse laser beam passes therethrough, and preset to provide said pulse laser beam with a certain amount of pre-chirp compensation, said pre-chirp compensator comprising optical elements which cause components of the pulse laser beam to be emitted in order of wavelength such that shorter wavelengths are emitted earlier than longer wavelengths,

20 a plurality of objective lenses adapted to be selectively placed on said optical path for collecting the pulse laser beam on the sample, and

a correcting mechanism for causing an optical path length of said optical path to be constant no matter which of said objective lenses is selectively placed on said optical path, and

25 wherein said certain amount of pre-chirp compensation provided by said pre-chirp compensator is set to prevent a pulse width of said pulse laser beam from widening due to a wavelength range of a pulse of said pulse laser beam when said pulse laser beam passes through said optical path whose optical path length
30 is kept constant.
